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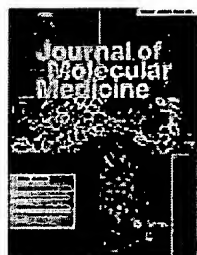
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Journal Article

The clinical significance of prostaglandins and thromboxane as mediators of septic shock

Journal Journal of Molecular Medicine

Publisher Springer Berlin / Heidelberg

ISSN 0946-2716 (Print)
1432-1440 (Online)

Subject Biomedical and Life Sciences and Medicine

Issue Volume 65, Number 2 / January, 1987

Category Originalien

DOI 10.1007/BF01745474

Pages 61-68

Online Friday, June 17, 2005

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Received:15 April 1986 **Revised:**16 May 1986 **Accepted:**

24 July 1986

Summary An evaluation was made of 106 surgical patients with Gram-negative septic shock, both for clinical criteria as well as the biochemical mediators endotoxin, prostaglandin $F_{2\alpha}$, prostaglandin I_2 (prostacyclin), and thromboxane. These data were correlated to various defined shock phases, functional data of vital organs, and clinical outcome. Patients underwent

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invasive organ function monitoring and the usual laboratory tests of intensive care. Prostaglandins and thromboxane were measured radioimmunologically, endotoxin by the limulus amebocyte lysate test. Endotoxin proved to be a more accurate predictor of severe sepsis than did positive blood cultures. Endotoxin as well as prostaglandins and thromboxane are predominantly released in early shock phases, appearing in plasma concentrations, which correlate with the severity of organ failure. Sepsis-induced respiratory failure coincides with a deterioration of pulmonary prostaglandin inactivation, which contributes to the release mechanism. High systemic prostacyclin activity benefits the patients' organ functions and clinical outcomes, while a predominance of thromboxane seems to effect the opposite. Transpulmonary-thromboxane gradients correlate significantly with pulmonary hypertension in the early phases of septic shock.

Key words Septic shock -
Endotoxin - Eicosanoids -
Prostaglandins - Thromboxane

Abbreviations AaDO₂ Alveolar-arterial O₂ gradient - AAS
Arachidonic acid system - ARDS
Acute respiratory distress syndrome - CI Cardiac index - CrCl Creatinine clearance - DIC Disseminated intravascular coagulation - EU Endotoxin unit - EU/ml Endotoxin unit per milliliter - HYPER Hyperdynamic shock - HYPO Hypodynamic septic shock - KH₂PGF_{2α} 13,14-Dihydro-15-Keto-PGF_{2α} - 6-K-

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PGF_{1α} 6-Keto-PGF_{1α} - LPS
Lipopolysaccharide - MABP Mean
arterial blood pressure - Norm
Normal values - PG
Prostaglandin - pg/ml Picogram
per milliliter - PGI₂ Prostacyclin
- PVR Pulmonary vascular
resistance - SVR Systemic
vascular resistance - TX
Thromboxane

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